



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,856	10/19/2001	Yasumasa Kasuya	10921.102US01	1107

23552 7590 04/10/2003

MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER

VU, QUANG D

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/027,856

Applicant(s)

KASUYA, YASUMASA

Examiner

Quang D Vu

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 11 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7, 8 and 10 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6 and 9 is/are rejected.
- 7) ☒ Claim(s) 3-5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9, in lines 1-3, the phrase "...the slit extends along a side surface of the semiconductor chip around the semiconductor chip" is unclear. The specification discloses a plurality of slits (9) extend along a plurality of side surfaces of the semiconductor chip around the semiconductor chip in figure 1. The specification never discloses a single slit (9) extends along a side surface of the semiconductor chip around the semiconductor chip in claim 9.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2811

4. Claims 1 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,281,568 to Glenn et al.

Regarding claim 1, Glenn et al. (figs. 2-7) teach a semiconductor device comprising:

a die pad (22) including a first surface (23) and a second surface (24) opposite to the first surface, the second surface (24) including an exposed portion and a retreated portion (a portion of the die pad formed by surfaces [25,26,27]) around the exposed portion (column 5, lines 14-27) (It is believed that the reference numeral for the third surface is "25" instead of "24" in column 5, line 25);

a semiconductor chip (52) mounted on the first surface (23) of the die pad (22); and

a sealing resin (51) covering the die pad (22) and the semiconductor chip (52), the resin allowing the exposed portion to be exposed and being held in contact with the retreated portion.

Regarding claim 6, Glenn et al. teach a terminal (a left terminal portion having surfaces [31,32,33]) electrically connected to the semiconductor chip (52) via a wire (54), the terminal being retained by the sealing resin so as to be partially exposed.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,281,568 to Glenn et al.

Art Unit: 2811

Regarding claim 2, Glenn et al. differ from the claimed invention by not showing the retreated portion is defined by a retreated surface and a side surface which adjoins the exposed portion and forms an acute angle together with the retreated surface. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the retreated portion is defined by a retreated surface and a side surface which adjoins the exposed portion and forms an acute angle together with the retreated surface because it improves the adhesion between the die pad and the sealing resin.

Allowable Subject Matter

7. Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Claims 7-8 and 10 are allowed.
9. The following is an examiner's statement of reasons for allowance: The most closely related art, US Patent No. 6,281,568 to Glenn et al. and US Patent No. 6,166,430 to Yamaguchi. Glenn et al. and Yamaguchi do not anticipate or render the claimed invention such as the die pad includes a thin walled portion formed by removing a part of the lower surface along a peripheral edge of the die pad, the die pad being formed with at least one slit extending through the thin wall portion. The second major difference in the claims not found in the prior art of record is the die pad is formed with a slit that is opened in the retreated surface of the second surface and in the first surface.

Art Unit: 2811

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang D Vu whose telephone number is 703-305-3826. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

qv
April 7, 2003

A handwritten signature in cursive script, appearing to read "Steven Loh".